

WHAT IS CLAIMED IS:

1 1. A wireless remote control system comprising:
2 a wireless transmitter having a button arranged to cause the
3 transmitter to transmit a command signal upon actuation by a user;
4 a receiver for receiving the transmitted command signal;
5 a signal detector connected to the receiver for detecting the distance
6 of the transmitter from the receiver as a function of the signal strength of the
7 received signal; and
8 a controller responsive to the signal detector for performing a first
9 associated function if the transmitter is detected as being within a predetermined
10 range, and a different function if the transmitter is detected as being outside the
11 predetermined range.

1 2. The system of claim 1 wherein the wireless remote control
2 system comprises a remote keyless entry system for a vehicle, said receiver being
3 mounted to the vehicle.

1 3. The system of claim 1 wherein the receiver is arranged to
2 generate an output signal that is proportional to the signal strength of the received
3 command signal.

1 4. The system of claim 1 wherein the receiver comprises a
2 superheterodyne receiver arranged to produce a Received Signal Strength Indicator
3 (RSSI) output.

1 5. The system of claim 1 wherein the signal detector is arranged
2 to compare the signal strength of the received command signal to a predetermined
3 threshold value indicative of distance from the receiver.

1 6. The system of claim 5 wherein the signal detector is arranged
2 to compare the signal strength of the received command signal to a plurality of
3 different predetermined threshold values, each indicative of different distance from

4 the receiver, and the controller is arranged to perform a different function for each
5 distance threshold.

1 7. The system of claim 1 further comprising a signal processor
2 connected to the receiver for determining whether the received command signal is
3 one of a set of commands enabled only for short-range operation, wherein the
4 controller is responsive to the signal processor for performing the function
5 associated with a short-range enabled command signal if the transmitter is detected
6 as being within the predetermined range.

1 8. The system of claim 1 wherein the transmitter comprises an
2 FM transmitter, the transmitter arranged to transmit the command signal with a
3 narrower FM deviation if the command signal is to trigger operation of the first
4 function, and a wider FM deviation if the command signal is to trigger operation of
5 the other function.

1 9. The system of claim 1 wherein the transmitter comprises an
2 ASK transmitter, the transmitter arranged to transmit the command signal with a
3 narrower bit width if the command signal is to trigger operation of the first function,
4 and a wider bit width if the command signal is to trigger operation of the other
5 function.

1 10. A method of remotely controlling operation of at least two
2 different functions in a wireless remote control system, wherein the system includes
3 a transmitter and a receiver, the method comprising:

4 transmitting a command signal;

5 receiving the command signal;

6 detecting the distance of the transmitter from the receiver as a
7 function of the signal strength of the received signal; and

8 performing a first function if the transmitter is detected as being
9 within a predetermined range, and a different function if the transmitter is detected
10 as being outside the predetermined range.

1 11. The method of claim 10 wherein receiving the command
2 signal further comprises generating an output signal that is proportional to the signal
3 strength of the received command signal.

1 12. The method of claim 10 wherein detecting the distance
2 comprises comparing the signal strength of the received command signal to a
3 predetermined threshold value indicative of distance from the receiver.

1 13. The method of claim 12 further comprising comparing the
2 signal strength of the received command signal to a plurality of different
3 predetermined threshold values, each indicative of different distance from the
4 receiver, and performing a different function for each distance threshold.

1 14. The method of claim 10 further comprising determining
2 whether the received command signal is one of a set of commands enabled only for
3 short-range operation, and performing the function associated with a short-range
4 enabled command signal if the transmitter is detected as being within the
5 predetermined range.

1 15. The method of claim 10 further comprising altering a
2 parameter of a command signal to reduce signal strength if the command signal is
3 only enabled for a shorter range.